

## REMARKS

The foregoing amendments and the following remarks are responsive to the Final Office Action mailed June 9, 2004. Applicants respectfully request reconsideration of the present application.

Claims 1-56 were examined. Claims 1, 36, 47, and 53 are amended. Claim 57-59 have been added. Therefore, claims 1-59 are presented for examination.

### Summary of the Office Action

Examiner rejected claims 1 and 36 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Examiner rejected claims 1-13, 17-22, 28-35 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,067,383 issued to Taniguchi, et al. in view of U.S. Patent No. 6,546,143 issued to Taubman, et al.

Examiner rejected claims 14-16 under 35 U.S.C. §103(a) as being unpatentable over Taniguchi, et al. in view of Taubman, et al., and in further view of U.S. Patent No. 5,761,655 issued to Hoffman.

Examiner rejected claims 23 and 24 under 35 U.S.C. §103(a) as being unpatentable over Taniguchi, et al. in view of Taubman, et al., and in further view of U.S. Patent No. 5,880,856 issued to Ferriere.

Examiner rejected claims 25-27 under 35 U.S.C. §103(a) as being unpatentable over Taniguchi, et al. in view of Taubman, et al., Ferriere, and in further view of U. S. Patent No. 6,615,224 issued to Davis.

Examiner rejected claims 47, 49, 51, and 52 under 35 U.S.C. §103(a) as being unpatentable over Taniguchi, et al. in view of Ferriere, and in further view of Davis.

Examiner rejected claim 48 under 35 U.S.C. §103(a) as being unpatentable over Taniguchi, et al. in view of Ferriere, Davis, and further in view of Hoffman.

Examiner rejected claim 50 under 35 U.S.C. §103(a) as being unpatentable over Taniguchi, et al. in view of Ferriere, Davis, and further in view of U.S. Patent Publication No. 2001/0049693 issued to Pratt.

Examiner rejected claims 53-55 under 35 U.S.C. §102(e) as being anticipated by Ferriere.

Examiner rejected claim 56 under 35 U.S.C. §103(a) as being unpatentable over Ferriere in view of Davis.

#### **Response to §112 rejections**

Claims 1 and 36 were amended to delete the limitation that the Examiner considered to be indefinite. Thus, it is submitted that the §112 rejection has been overcome.

#### **Response to §102(e) rejections**

Claim 53, as amended, reads as follows:

A system providing an improved method of uploading image data, the system comprising:  
a logic to separate the image data into separate color planes, according to a particular color space;  
a logic to transform the color planes into frequency bands, wherein the frequency bands include a first band with a first number of bitplanes;  
**a logic to partition the image data into a plurality of layers**, wherein each of the plurality layers includes information that permits rendering of the entire image, the plurality of layers being additive to render the image at increasingly better qualities and wherein **a layer includes a subset of the bitplanes of the first band**;  
a logic to allow a destination device to control uploading of successive layers to the destination device.

Ferriere discloses a method of storing and of progressively transferring a still image so that it can be conveniently previewed during the transfer and so that a user can terminate the transfer at an early stage if the image turns out to be undesirable. The methods in Ferriere include transforming the image into a plurality of decomposition

levels using a discrete wavelet transform, wherein each decomposition level comprises a plurality of subimages which allow reconstruction of an image representation of the still image. The decomposition levels are transmitted beginning with a base decomposition level providing a low level of image resolution and then proceeding with decomposition levels providing increasingly higher levels of image resolution. Within each decomposition level, rows of the various subimages are arranged or interlaced together in contiguous blocks, so that all data for a single row, at a single decomposition level, is transmitted together. At the receiving end of the transfer, the row blocks are reconstructed and displayed as they are received. The invention enables the initial display of a low resolution image which is gradually updated and sharpened, on a row-by-row basis, until a desired high resolution is achieved. (Ferriere, Abstract.)

Ferriere does not disclose or suggest a system including "a logic to transform the color planes into frequency bands, wherein the frequency bands include a first band with a first number of bitplanes" and **"a logic to partition the image data into a plurality of layers, wherein each of the plurality layers includes information that permits rendering of the entire image, the plurality of layers being additive to render the image at increasingly better qualities and wherein wherein a layer includes a subset of the bitplanes of the first band,"** as recited in claim 53. Because Ferriere fails to disclose or suggest each and every element of claim 53, claim 53 and its dependent claims are patentable and should be allowed.

### **Response to §103 rejections**

Claim 1, as amended, reads as follows:

A method for storing and transmitting image data between occasionally-connected devices, the method comprising:  
capturing an image at a sensor of a first device;  
storing the image as image data in a memory of the first device;  
separating the image data into separate color planes, according to a particular color space;  
transforming each of the planes into separate bands, based on frequency information present in each plane, wherein **the separate bands include a first band with a first number of bitplanes;**  
quantizing each band of each of the planes to a particular bit depth;  
coding each band of each of the planes for compressing the image data; based on quality and resolution provided by each band at a certain bit depth, **organizing the bands into a plurality of layers suitable for**

**progressive transmission to a target device, wherein a layer includes a subset of the bitplanes of the first band; and**  
upon connection of the first device to a second device, transmitting a selected one of said plurality of layers from the first device to the second device.

Taniguchi discloses a coding process including designating an original image, designating a color separation means for separating the original image into a plurality of color components, designating a wavelet transform means for wavelet-transforming the color-separated image data designating a quantization means for quantizing the transformed data, designating a variable-length coding means for variable-length coding of the quantized data designating a priority judge means for deciding the priority for storage of the variable-length codes, and designating a code storage means for storing the variable-length codes according to the priority. (Taniguchi, col. 11, ll. 45-61.)

Taubman discloses a "progressive-by-quality" transmission and a "progressive-by-resolution" transmission. In a "progressive-by-quality" transmission, the transform coefficients can be ordered in a hierarchical structure and transmitted in an "embedded bitstream." The embedded bitstream has a property whereby prefixes of the bitstream yield a continuum of lower rate descriptions of the data at the highest possible levels of quality. If the embedded bitstream is truncated during transmission of image data, for instance, the information already transmitted allows an entire image to be reconstructed. The quality of the reconstructed image is dependent upon the amount of information transmitted. If an embedded bitstream is truncated, a complete image of reduced quality can be reconstructed from the transmitted bits. (Taubman, col. 1, ll. 35-50.) The progressive-by-resolution transmission, on the other hand, involves ordering the coefficients according to different levels of image resolution. (Taubman, col. 1, ll. 60-63.)

However, Taniguchi, Taubman and a combination thereof fail to disclose or suggest a method including "transforming each of the planes into separate bands, based on frequency information present in each plane, **wherein the separate bands include a first band with a first number of bitplanes**" and **"organizing the bands into a plurality of layers suitable for progressive transmission to a target device, wherein a layer includes a subset of the bitplanes of the first band,"** as recited in claim 1. Because Taniguchi, Taubman and a combination thereof fail to disclose or

suggest each and every element of claim 1, claim 1 and its dependent claims are patentable and should be allowed.

Claim 36, as amended, recites "transforming the color planes into a **plurality of bands, each band from the plurality of bands including a plurality of bitplanes**; partitioning said image information at the source device into a plurality of layers, based on resolution and quality criteria, wherein **a layer includes at least a subset of bitplanes from two bands from the plurality of bands.**" Thus, claim 36 and its dependent claims are patentable and should be allowed for at least the reasons articulated with respect to claim 1.

Taniguchi Taubman, Hoffman, Ferriere, Davis, and a combination thereof fail to disclose or suggest a method including "transforming each of the planes into separate bands, based on frequency information present in each plane, **wherein the separate bands include a first band with a first number of bitplanes**" and "**organizing the bands into a plurality of layers suitable for progressive transmission to a target device, wherein a layer includes a subset of the bitplanes of the first band,**" as recited in claim 1. Therefore, claims 14-16 and 23 - 27 are patentable and should be allowed at least by virtue of being dependent on claim 1.

Taniguchi Taubman, Hoffman, Ferriere, Davis, Pratt, and a combination thereof fail to disclose or suggest a system including "logic for transforming the color planes into frequency bands, wherein the frequency bands include **a first band with a first number of bitplanes**" and "logic for partitioning said image data into successive layers, wherein each successive layer stores information that permits rendering of the entire image at increasingly higher resolution and/or increasingly higher quality and wherein **a layer includes a subset of the bitplanes of the first band,**" as recited in claim 47. Thus, claim 47 and its dependent claims are patentable and should be allowed for at least the reasons articulated with respect to claims 1 and 53.

Ferriere, Davis and a combination thereof does not disclose or suggest a system including "a logic to transform the color planes into frequency bands, wherein **the frequency bands include a first band with a first number of bitplanes**" and "a logic to partition the image data into a plurality of layers, wherein each of the plurality layers includes information that permits rendering of the entire image, the plurality of layers being additive to render the image at increasingly better qualities and wherein **a layer**

includes a subset of the bitplanes of the first band," as recited in claim 53. Thus, claim 56 is patentable and should be allowed at least by virtue of being dependent on claim 53.

**Conclusion**


In view of the foregoing amendments and remarks, Applicants respectfully submit that all pending claims are in condition for allowance. Such allowance is respectfully requested.

If the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully requested to contact Elena Dreszer at (408) 947-8200.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

Date: 11-08-04

  
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